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Panel session IV: skill development for better labor market outcomes

Possible guidelines for the discussion by Marco Vivarelli

1) Is skill-shortage really a problem for developing countries (DCs)?

On the one hand, the Stolper-Samuelson (SS) corollary of the Heckscher-Ohlin theorem predicts that both trade and FDI should take advantage of the abundance of low-skilled labour in DCs and so imply an increasing demand for domestic low skilled labour and hence decreasing within-country wage dispersion and income inequality (Wood, 1994 and 1997; for a critical view, see Milanovic, 2002).
On the other hand, the Feenstra and Hanson (1996 and 1997) model points out that what is unskill-intensive in a developed country may be skill-intensive in terms of the labour market of the DC; accordingly, shifting production from developed towards developing countries (both through FDI and import/export trade relationships) may imply increasing inequality both in the former and in the latter. For instance, outsourcing of production through FDI from the U.S. to Mexico implies that plants which were relatively intensive in unskilled labour in the U.S. would be relatively skill-intensive in Mexico (with a higher ratio of skilled/unskilled labour than domestic plants), thus implying skill-shortage, raising relative wages and so income inequality.

2) A possible role for the imported Skill-Biased Technological Change (*SBTC*)

Capital equipment and intermediate goods constitute the vast majority of imports by DCs. Both FDIs and imports of capital goods involve *"skill-enhancing trade"*, (Robbins, 1996 and 2002; Berman and Machin, 2000 and 2004; Vivarelli, 2004). In fact, even without necessarily assuming that developed countries transfer their "best" technologies to the DCs, it is quite reasonable to expect that transferred technologies are relatively skill-intensive, i.e. more skill-intensive than those in use domestically before trade and FDI liberalization. If such is the case, openness – via technology – should imply a counter-effect to the SS theorem prediction, namely an increase in the demand for locally skilled labour.
At least with regard to middle-income DCs, this tendency can be amplified by the diffusion of *ICT* which are both "general purpose" (Bresnahan and Trajtenberg, 1995) and highly skill-biased (Berman, Bound and Griliches, 1994; Doms, Dunne and Troske, 1997; Machin and Van Reenen, 1998).

3) The low skill / low technology trap

While the *SBTC* models assume that exogenous technological trends affect the demand for skills, it can be argued that technological choices at the level of the firm may actually be influenced by skill endowments (the so-called *endogenous skill-bias*, see Acemoglu 1996 and 1998; Kiley 1999). If such is the case, a possible trap may arise in DCs: local firms do not innovate and FDI are not attracted because the local workforce is unskilled, while domestic workers do not engage in education and training because there is an insufficient demand for skilled workers from local and foreign firms. Accordingly, it is not surprising that many domestic and foreign employers in DCs

claim skill shortage as one of their main constraints limiting both the enlargement of existing plants and the start-up of new establishments (O'Connor and Lunati, 1999).

4) Market and government failures in the provision of skills

An obvious solution to the shortcomings and possible bottlenecks discussed above is an increasing supply of education and training in order to overcome skill shortage which involves a constraint both to technological change and, more generally, to economic growth in the DCs. In principle, a higher demand for skills should increase both profit expectations and the relative wages, so automatically inducing a higher supply of skills.

However, informational drawbacks and *"market failures"* may arise. For instance, firms may be either reluctant to up-grade their employees' skills because they are afraid of "poaching" (Stevens, 1996) or uncertain about future returns on skills, while employees may be sceptical about self-financed training courses because of information asymmetries about the specific skills employers would need in the future. However, public provision of education and training is not immune from possible *"government failures":* for instance, employers' skill requirements are often idiosyncratic and public authorities cannot know all of them in detail; moreover, public training is often affected by bureaucratization, inefficiency and short-termism (Booth and Snower, 1996).

Both private and public negative externalities and failures are likely to be amplified where the institutional context is particularly weak, as it is the case of most DCs (think, for instance, of the need for a tripartite consensus in shaping the national and local ALMPs favouring adult education and on-the-job training, see ILO, 2004, pp. 62-64 and 108-109). Thus, traditional issues such as the best interaction between the education and the training system in order to maximise economic performance (Keep and Mayhew, 1988) are surely more complicated to deal with in the context of low and middle income DCs.

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